

REMARKS

In the Office Action dated March 21, 2005, the Examiner stated that newly-added claims 16-30 were drawn to a “patentably distinct species of the claimed invention” as compared to claims 1-15. Claims 16-30 were withdrawn from prosecution by the Examiner in the Office Action as a consequence of the fact that Applicant previously had received an action on the merits with respect to claims 1-15. Applicant does not respond herein with respect to claims 16-30, without prejudice to its right to further prosecute them.

In the Office Action dated March 21, 2005, the Examiner rejected independent claim 1 and claims 2-15 that depend on it as defining subject matter obvious in view of U.S. Patent Nos. 4,631,685 to Peter, 5,855,706 to Grewell, and 4,818,313 to Sundberg. Applicant respectfully requests that the Examiner reconsider this rejection, in light of the amendment to claim 1 set forth above and the following remarks.

As the Examiner recognized in the Final Office Action, “Peter … does not disclose, depending on the existing difference between the set curve and the actual curve, of at least one welding process parameter affecting welding being altered to a value based on that existing difference such that an equalization of the set curve and the actual curve occurs during further welding.” Office Action, p. 4. Similarly, Peter does not disclose this limitation of claim 1 as amended herein: *in the event the actual curve differs from the set curve at a time of comparison, depending on the difference between the set curve and the actual curve, altering at least one welding process parameter affecting welding to a value chosen based on that existing difference in order that the difference is reduced during welding after the time of comparison and the actual curve converges toward the set curve.* (Emphasis added.)

Rather, Peter discloses turning off the energy when a preset value of a specific parameter (displacement) is reached. (Abstract, lines 6-8; col. 1, lines 34-41; col. 3, lines 55-59) The turn-off occurs when that value of displacement is reached, *not* when the measured displacement *deviates* from a desired displacement. In Peter, it is expected that the chosen preset displacement value which triggers the energy turn-off will be reached in

the course of every normal weld process. Moreover, when that preset value is reached, the energy supply is not adjusted to a new value depending on the displacement, in an effort to correct for the deviation between an actual and a set curve or value. It is turned off completely. In claim 1 herein, however, a welding parameter is adjusted when and if the actual measured value of a parameter *deviates* from the time-dependent value desired (i.e., from the set value or curve). The language of the limitation in claim 1, as amended herein, requires that the parameter be altered “in the event the actual curve differs from the set curve at a time of comparison.” Thus, the welding parameter is *not* required to be altered if the actual curve followed the set curve exactly, without deviating, throughout the weld process. And in claim 1 when an adjustment is made because a deviation has occurred the magnitude of the adjustment may be chosen based upon the magnitude of the deviation in order to cause the deviation to be reduced or eliminated (i.e., to cause the measured value to approach or reach the set value).

The Examiner cited Sundberg and Grewell to provide this feature, but Applicant respectfully suggests that they do not. In Sundberg, the method is directed at prolonging the weld process so that an appropriate amount of energy is delivered to the weld. (col. 3, lines 63-68) The Sundberg method is to completely turn off the power when that predetermined amount of energy has been delivered. (col. 3, lines 63-68; col. 5, lines 3-8; col. 6, lines 62-64; Figures 4, 5) Again, there is no adjustment of a parameter during the course of the welding based on the magnitude of a deviation from a desired or set value; in Sundberg the weld is allowed to continue until it is determined that the desired amount of energy has been delivered.

Grewell, unlike Peter or Sundberg, does adjust a parameter such as amplitude or force in response to measuring another parameter. (Abstract, lines 5-9; col. 3, lines 9-16; col. 9, lines 28-37, 48-65) But in Grewell the adjustment is to a *predetermined* new value (Figure 6, col. 9, lines 34-36), while in claim 1 as amended herein the magnitude of the adjustment may be chosen depending on the magnitude of the divergence between the time-dependent set curve and the actual value, in order that the actual value converges to the set value.

Also, in Grewell the adjustment is *not* for the purpose of making the actual curve conform to a set curve from which it has *diverged*. The adjustment is made *in normal operation* at a certain point in the process. In Grewell, in Figure 6, it shows the amplitude being reduced to a predetermined lower value, so that melting will be slower; there is no effort being made to match any deviating value to a set curve. In claim 1, however, the purpose of the adjustment is to make a *diverging* actual curve converge to a set curve. In claim 1, a welding parameter is adjusted *when and if* the actual measured value of a parameter *deviates* from the time-dependent value desired (i.e., from the set value or curve). As noted above, the language of the limitation in claim 1, as amended herein, requires that the parameter be altered “in the event the actual curve differs from the set curve at a time of comparison.” The welding parameter according to claim 1 is *not* required to be adjusted if the actual curve followed the set curve exactly, without deviating, throughout the weld process. And in claim 1 when an adjustment is made because a deviation has occurred the magnitude of the adjustment may be chosen based upon the magnitude of the deviation in order to cause the deviation to be reduced or eliminated (i.e., to cause the measured value to approach or reach the set value).

Accordingly, Applicant asks that the Examiner reconsider and allow claims 1-15, as amended herein.

CONCLUSION

In view of the foregoing amendment and remarks, Applicant considers the Response herein to be fully responsive to the referenced Office Action, and respectfully submits that the pending claims are in condition for allowance. Early and favorable reconsideration is therefore respectfully solicited. If there are any remaining issues or the Examiner believes that a telephone conversation with Applicant’s attorney would be helpful in expediting the prosecution of this application, the Examiner is invited to call the undersigned at 617-832-1118. Should an extension of time be required, Applicant hereby petitions for same and requests that the extension fee and any other fee required for timely consideration of this application be charged to Deposit Account No. 06-1448.

PATENTS
Attorney Docket No. STE-023.01

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Stephen B. Deutsch". It consists of a stylized 'S' and 'D' followed by a more fluid, cursive script.

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